

Abstract

A micromirror device comprises a reflective element that is supported by at least 1 support wall. Support walls are designed for providing devices with improved mechanical and optical performance. Support walls are supported by a deformable element. The deformable element may be a torsion hinge. The deformable element may be supported by support structures that are designed to limit the deflection of the reflective element. An array of micromirror devices may be used as a spatial light modulator (SLM). Methods of fabricating micromirror arrays comprise the steps of: 1) providing a three-layer substrate, comprising a crystalline layer, a sacrificial layer, and a base layer, with the sacrificial layer being disposed between the crystalline layer and the base layer; 2) forming a deformable element in the crystalline layer; 3) forming support structures for the deformable element; and 4) forming electronic circuits on the base layer.